

Weekly Report for 03/17/2014

Highlights

- Prepare MBA injection CDR review (Aimin Xiao)
- Performed beam lifetime measurement vs coupling (for calibration purpose) (Aimin Xiao)

APS Renewal and Upgrade

- Continue MBA injection simulation with various errors. Fixed some problems inside the post processing script. (Aimin Xiao)
- Prepare MBA injection CDR review (Aimin Xiao)
- Discuss stripline good field region specification with CY and LEm. (Aimin Xiao)
- Estimate space charge effects for MBA lattice (Aimin Xiao)

APS Machine Studies

Storage Ring Studies

- Set up experiment for emittance ratio calibration using beam lifetime measurement. Performed the measurement and did preliminary analysis. First results confirms that high emittance ratio can be obtained through bring tunes to coupling resonance line. (Aimin Xiao)
- Continued to look at beam loss at the SCU while firing IK5. Need to understand timing of IK5 relative to the MPS. (Jeff Dooling)
- Firing IK5 without MPS trip significantly depletes charge in the SR over the time the pinger magnet is energized; however, do not see this effect when MPS is triggered. (Jeff Dooling)

Linac Studies

- Worked on RG1 matching in the linac. Was able to find a good solution for efficient beam transport through the PAR. (Jeff Dooling)

ITS Studies

- Met with W. Berg and Y. Sun to discuss coordination of the RadiaBeam experiment scheduled to be installed in the ITS later this summer. (Jeff Dooling)

APS Machine Research and Development

Linac Research and Development

- Concluded pcgun conditioning with conditioning team; began work on the pc gun drive laser. (Jeff Dooling)

APS Machine Software

AOP Applications Software

- Added the SR BPM Offset Adjustment tool to the routine operations menu per Steve Christensen's request. (Robert Soliday)

Injectors

- splitted plot button for ITS_current in AcquireITSWaveforms into ICT, BendFC, StraightFC, requested by Yine. (Hairong Shang)

- added APSMpSwitchToVRamp pem to switch booster ramp correction to voltage ramp and APSMpSwitchToIRamp pem for switching booster ramp correction to current ramp. (Hairong Shang)
- wrote GetBooRampCurrWF for taking Booster ramp current waveforms. (Hairong Shang)
- continue implementing and testing booster IRamp with CY. (Hairong Shang)
- converted compute booster IRamp gain and delay script with correlation method into C, which improved the compute speed quite much, prepare for importing the code into IOC. (Hairong Shang)
- Updated the descriptions for APSMpITS_SwitchToTestStand and APSMpITS_SwitchToL3Down machine procedures per Pasky's request. (Robert Soliday)
- Added the APSMpBoosterShutdownForAccess machine procedure. (Robert Soliday)
- Fixed an issue setting up the linac controllaw with the LPL_Configure machine procedure when coming out of test stand mode. (Robert Soliday)
- Updated the LPL_Configure machine procedure to allow the user to continue of the modulator power controllaws cannot be started. (Robert Soliday)
- Fixed an issue with the APSMpPARLETTurnOn.tcl script because the vacuum valve PVs changed names. (Robert Soliday)

General

- changed the default minimum singular ratio to 0 instead of 0.01 in quickResponseMatrix because it lost accuracy for small matrices. (Hairong Shang)
- added catch statement to "grep" command in ScopeSaveRestore to avoid a "child process exited abnormally" error when there is no contents returned by "grep" command. (Hairong Shang)
- Added the levelList option to sddscontour, which is used to specify where the contour lines are drawn. (Robert Soliday)
- Built sddspseudoinverse with an evaluation version of Intel MKL instead of CLAPACK. This is much faster. (Robert Soliday)
- Updated mpl_motif by increasing the PNG save file resolution. (Robert Soliday)
- In the process of updating the makefiles for the SDDS software to make it more explicit which programs rely on which libraries. (Robert Soliday)

Simulation Software

- Released new versions SDDS ToolKit, SDDS EPICS ToolKit and Elegant for all our supported platforms. (Robert Soliday)

IOC/EPICS/Controls/Linux/Solaris/Linux Clusters/Data Loggers/Simulation software

- Updated the startSddspcas cronjob to fix a problem starting up sddspcas after a reboot. (Robert Soliday)
- Updated the PSS warning and fault descriptions in PSSGlobalWatchdog per McNamara's request (Robert Soliday)
- Moved a few cron jobs off of nuke and on to challenger. (Robert Soliday)

- Added PVs to the SR Chamber Temp data logger per Erwin's request. (Robert Soliday)
- Fixed a problem with one of the lustre drives in the linux cluster that caused the whole cluster to lock up. (Robert Soliday)

Publications, papers and report

- Completed draft of tech note discussing material selection for the S37 scraper. (Jeff Dooling)

Web Site

- Ported Borland's changes to chooseBestMBAID.tcl and chooseBestID.tcl to the web page version. (Robert Soliday)

Safety and Required Training

- Done with training course HR498 and SEC101 (Aimin Xiao)

Miscellaneous

- Helped Henry Freund (formerly with LANL) install elegant. (Robert Soliday)
- Helped Chris Eckman with MATLAB/SDDS. (Robert Soliday)
- Helped Alessandro Vivoli (FNAL) install our software on Ubuntu 12.04.4. (Robert Soliday)
- Exceeded my old Windows XP laptop. (Robert Soliday)